

ABSTRACT OF THE DISCLOSURE

A combustion-based system and related method includes a combustor for burning a combustible material, wherein an exhaust gas stream output by the combustor includes NO₂ and at least one metal including mercury. An ultraviolet light source is in optical communication with the exhaust gas stream. Ultraviolet light from the light source photochemically dissociates at least a portion of the NO₂ to form an NO₂ reduced exhaust stream. A sorbent containing filter media receives the NO₂ reduced exhaust stream and as a result of the reduction in NO₂ provides improved trapping efficiency of mercury.